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Babel Fish Translation

In English:

Apparatus for the food of the poultries. The invention has as an aim an apparatus has reserve of food and being useful has to feed the poultries mainly by means of powder flours. The apparatus is primarily constitutes by a metal cylinder of suitable size and receiving a determinee quantity flour, this cylinder etant goes up on a tube support lays out along its axis; the position of the cylinder etant reglable in height on this tube. The cylinder is firm A its part higher by a removable conical hat, the conical form empechant the betes to perch itself on this hat. One of characteristic essential of the apparatus such as decrit above reside in the shape of the edges of the lower basin which recoit normally food deversant cylinder tank, these edges etant rounded with curve dirigee towards the interior of the basin, provision which evite any wasting of food which could occur with a basin has vertical edges, allowing the passage has the exterior of the basin of a part of food when the bets picorent. Another characteristic interessante of the apparatus consists in the provision, on the walls inferieures of the cylinder forming tank, of suitable slits of dimensions as well in height as in width and into which the betes can introduce their nozzle for picorer has the interior of the cylinder tank when the flours, for an unspecified reason, do not slip any more between the body of the cylinder and the conical bottom of the basin. The slits in question can be vertical or oblique. With the additional drawing, there is represente has title of example an apparatus in conformity has the invention. If one refers to the drawing, one sees that the apparatus is primarily constitutes by a metal cylinder 1 in tole black or galvanisee for example and of a basin 2, the provision etant such that the cylinder does not touch the cuvettee. This basin 2 presente an edge curves 3 directs towards the interior as it is visible with the drawing and its bottom east pushes back upwards in the shape of cone 4. The cylinder tank or tremy 1 east supports by a stem or a tube 5 lays out along its axis and connects to the top conical bottom 4 of the

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basin. The cylinder carries two pilot wheels forms by flats 6, 6' lay out one has the higher part and the other, has the lower part of the cylinder; these pilot wheels perforate in their millieu can slide on the stem or tube 5. Holes borers in the stem or the tube allow the passage of a pin for the maintenance of one of the pilot wheels has the suitable height for the reglage of the spacing of the edge inferior of cylinder 1 of the bottom of basin 2. A conical lid of form closes the apparatus and east intends has eviter that the betes are not perched on the apparatus. With the lower part of the cylinder, fents 8 in a number are decoupees adapts, these slits having necessary dimensions so that the voilailles can pass their nozzle there. The apparatus decreit previously, which forms a unit, fear being sureleve by placant it on a support trepie 9 or any other support. The operation of the apparatus is included/understood has premiere seen. It is load in powder flour by deversant the powder has the higher part of cylinder 1 by removing lid 7. Flour ecoule by its own weight in the content of basin 2 while slipping on the conical bottom 4 of this basin. The bypass section of food is reglee by the distance from the edge inferior of cylinder 1 compared to the bottom of the basin. It can happen that the flour does not slip any more on the conical bottom 4 of the basin in consequence of voutes being able to be formed by the compressing of food. The betes cannot feed any more while picorant in the basin in which the flour is not deverserait any more. It will be however possible for them to feed while passing their nozzle in slits 8. It is the one provision which presente an interest in practice because the elevor will not have has to monitor its apparatuses for verifier constantly their correct operation. The blows of nozzle in the slits will practise the collapse of the voutes formees by the flour while enabling him to slip has new on the bottom. Moreover, in normal case of operation, when the betes feed while directly plunging their nozzle in the basin, there will not be a loss of food, the curved edges of the basin empechant food eclaboussee by the betes while picorant, to fall has the exterior. It is clearly understood that this apparatus which is mainly intends has to receive powder flours could be also uses for the flours in granule and same for seeds. In the employment case of seeds, in order to eviter deversement of seeds by the slits, one will be able to seal these slits by means of a collar threads on the cylinder. The cylindrical shape of the tank tremy 1 does not have ete donnee which title of example has.

It is quite obvious that this tank tremy could have a cross section, rectangular, carree or very other form suitable. Summary 1. Being useful apparatus has the food of the poultries and particulierment for nourriture by means of powder flours and comporant a cylinder tremy charges of food, supports by an axial tube on which it is reglable in position, interdependent of a lower basin has conical bottom sureleve on which ecoule, by the passage reserve reblable between the lower part of the cylinder tremy and the conical bottom, food in the basin whose round edge is has curve dirige towards the interior, so as to eviter any loss of food when the betes picorent, while the walls inferieures of the cylinder presentent slits by which the betes can pass their nozzle t un cylindre tremie charge de nourriture, supporte par un tube axial sur lequel il est reglable en position, solidaire d' une cuvette inferieure a fond sureleve conique sur lequel s' ecoule, par le passage reserve reblable entre la partie inferieure du cylindre tremie et le fond conique, la nourriture dans la cuvette dont le rebord arrondi est a courbure dirige vers l' interieur, de maniere a eviter toute perte de nourriture lorsque les betes picorent, tandis que les parois inferieures du cylindre presentent des fentes par lesquelles les betes peuvent passer leur bec pour s' alimenter directly into the cylinder tremy in the case or, for an unspecified cause, food would not slip any more on the conical bottom into the basin. 2.

Apparatus according to 1 including/understanding the characteristic following ones: has. The cylinder is covered by a removable lid with conical form; B. The slits of the cylinder tremy can be obturees, in the event of use of seeds like foods, by a collar.

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Appareil pour la nourriture des volailles.

L'invention a pour objet un appareil a reserve de nourriture et servant a alimenter les volailles principalement au moyen de farines en poudre. L'appareil est essentiellement

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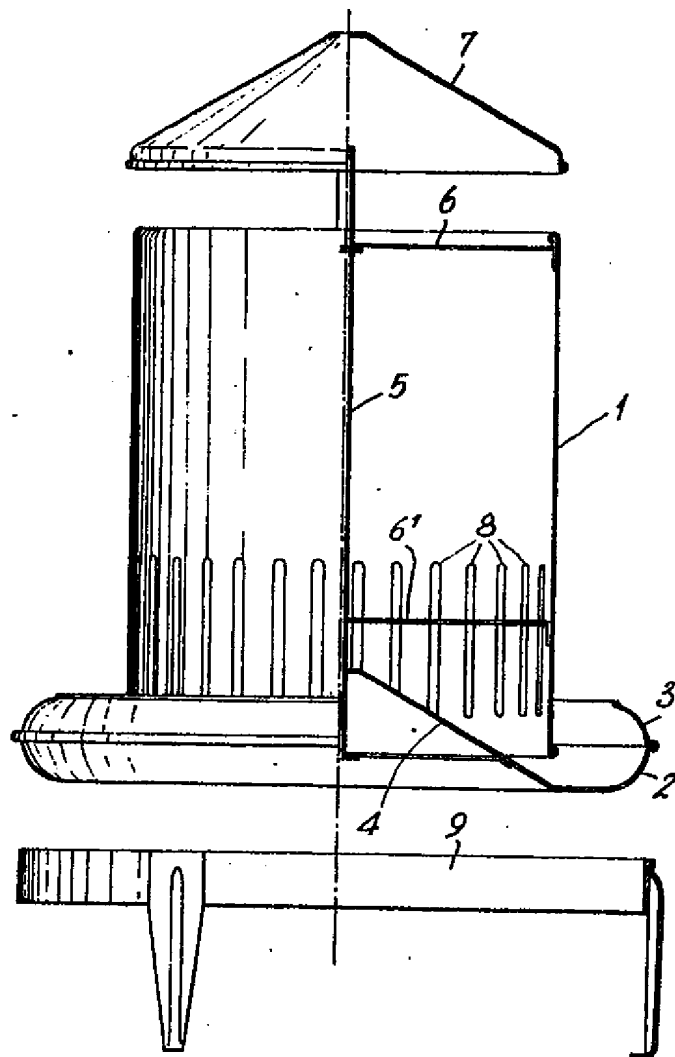
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Appareil pour la nourriture des volailles.

Société dite : BERNARD & C^{ie} résidant en France (Finistère).

Demandé le 8 août 1955, à 16 heures, à Paris.

Délivré le 10 septembre 1956. — Publié le 24 janvier 1957.



L'invention a pour objet un appareil à réserve de nourriture et servant à alimenter les volailles principalement au moyen de farines en poudre. L'appareil est essentiellement constitué par un cylindre métallique de dimensions convenables et recevant une quantité déterminée de farine, ce cylindre étant monté sur un tube support disposé suivant son axe; la position du cylindre étant réglable en hauteur sur ce tube. Le cylindre est fermé à sa partie supérieure par un chapeau conique amovible, la forme conique empêchant les bêtes de se percher sur ce chapeau.

L'une des caractéristiques essentielles de l'appareil tel que décrit ci-dessus réside dans la forme des bords de la cuvette inférieure qui reçoit normalement la nourriture se déversant du cylindre réservoir, ces bords étant arrondis avec courbure dirigée vers l'intérieur de la cuvette, disposition qui évite tout gaspillage de nourriture qui pourrait se produire avec une cuvette à bords verticaux, permettant le passage à l'extérieur de la cuvette d'une partie de la nourriture lorsque les bêtes picorent.

Une autre caractéristique intéressante de l'appareil consiste dans la disposition, sur les parois inférieures du cylindre formant réservoir, de fentes de dimensions convenables tant en hauteur qu'en largeur et dans lesquelles les bêtes peuvent introduire leur bec pour picorer à l'intérieur du cylindre réservoir lorsque les farines, pour une raison quelconque, ne glissent plus entre le corps du cylindre et le fond conique de la cuvette. Les fentes en question peuvent être verticales ou obliques.

Au dessin annexé, on a représenté à titre d'exemple un appareil conforme à l'invention.

Si l'on se reporte au dessin, on voit que l'appareil est essentiellement constitué par un cylindre métallique 1 en tôle noire ou galvanisée par exemple et d'une cuvette 2, la disposition étant telle que le cylindre ne touche pas la cuvette. Cette cuvette 2 présente un rebord courbé 3 dirigé vers l'intérieur ainsi qu'il est visible au dessin et

son fond est repoussé vers le haut en forme de cône 4.

Le cylindre réservoir ou trémie 1 est supporté par une tige ou un tube 5 disposé suivant son axe et relié au sommet du fond conique 4 de la cuvette. Le cylindre porte deux croisillons formés par des fers plats 6, 6' disposés l'un à la partie supérieure et l'autre, à la partie inférieure du cylindre; ces croisillons perforés en leur milieu peuvent coulisser sur la tige ou le tube 5. Des trous percés dans la tige ou le tube permettent le passage d'une goupille pour le maintien d'un des croisillons à la hauteur convenable pour le réglage de l'écartement du bord inférieur du cylindre 1 du fond de la cuvette 2.

Un couvercle de forme conique ferme l'appareil et est destiné à éviter que les bêtes ne se perchent sur l'appareil.

À la partie inférieure du cylindre, sont découpées des fentes 8 en nombre approprié, ces fentes ayant les dimensions nécessaires pour que les volailles puissent y passer leur bec.

L'appareil décrit précédemment, qui forme un ensemble, peut être surélevé en le plaçant sur un support trépied 9 ou tout autre support.

Le fonctionnement de l'appareil se comprend à première vue. Il est chargé en farine en poudre en déversant la poudre à la partie supérieure du cylindre 1 en enlevant le couvercle 7. La farine s'écoule par son propre poids dans le fond de la cuvette 2 en glissant sur le fond conique 4 de cette cuvette. La section de passage de la nourriture est réglée par la distance du bord inférieur du cylindre 1 par rapport au fond de la cuvette. Il peut arriver que la farine ne glisse plus sur le fond conique 4 de la cuvette par suite de voutes pouvant se former par le tassement des aliments. Les bêtes ne peuvent plus s'alimenter en picorant dans la cuvette dans laquelle la farine ne se déverserait plus. Il leur sera cependant possible de s'alimenter en passant leur bec dans les fentes 8.

C'est là une disposition qui présente un intérêt dans la pratique car l'éleveur n'aura pas à surveil-

ier constamment ses appareils pour vérifier leur bon fonctionnement. Les coups de bec dans les fentes pratiqueront l'effondrement des voûtes formées par la farine en lui permettant de glisser à nouveau sur le fond.

De plus, en cas normal de fonctionnement, quand les bêtes s'alimentent en plongeant directement leur bec dans la cuvette, il ne se produira pas de perte de nourriture, les rebords courbes de la cuvette empêchant la nourriture éclaboussée par les bêtes en picorant, de tomber à l'extérieur.

Il est bien entendu que cet appareil qui est principalement destiné à recevoir des farines en poudre pourrait être également utilisé pour les farines en granulé et même pour les graines. Dans le cas d'emploi de graines, afin d'éviter le déversement des graines par les fentes, on pourra obturer ces fentes au moyen d'un collier enfilé sur le cylindre.

La forme cylindrique du réservoir trémie 1 n'a été donnée qu'à titre d'exemple. Il est bien évident que ce réservoir trémie pourrait avoir une section transversale, rectangulaire, carrée ou toute autre forme convenable.

RÉSUMÉ

1° Appareil servant à la nourriture des volailles et plus particulièrement pour la nourriture au

moyen de farines en poudre et comportant un cylindre trémie chargé de nourriture, supporté par un tube axial sur lequel il est réglable en position, solidaire d'une cuvette inférieure à fond surélevé conique sur lequel s'écoule, par le passage réservé réglable entre la partie inférieure du cylindre trémie et le fond conique, la nourriture dans la cuvette dont le rebord arrondi est à courbure dirigée vers l'intérieur, de manière à éviter toute perte de nourriture lorsque les bêtes picorent, tandis que les parois inférieures du cylindre présentent des fentes par lesquelles les bêtes peuvent passer leur bec pour s'alimenter directement dans le cylindre trémie dans le cas où, pour une cause quelconque, la nourriture ne glisserait plus sur le fond conique dans la cuvette.

2° Appareil d'après 1° comprenant les caractéristiques suivantes :

a. Le cylindre est recouvert par un couvercle amovible de forme conique;

b. Les fentes du cylindre trémie peuvent être obturées, en cas d'utilisation de graines comme nourritures, par un collier.

Société dite : BERNARD & C^{ie}.

Par procuration :

Office Josse.

119-52-AF

31

FIG. 2

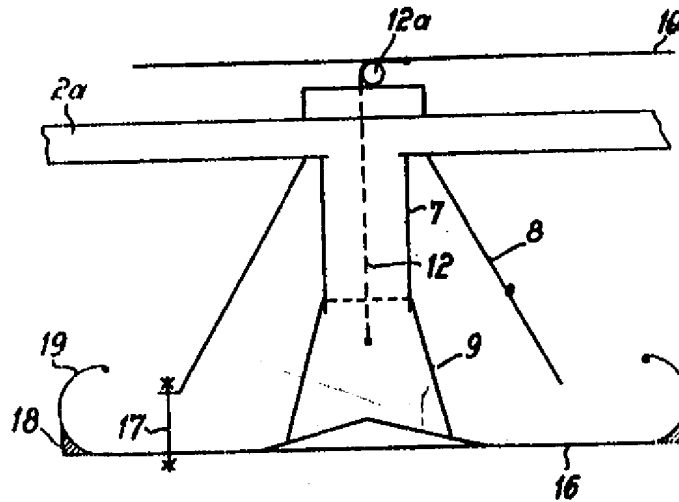


FIG. 3

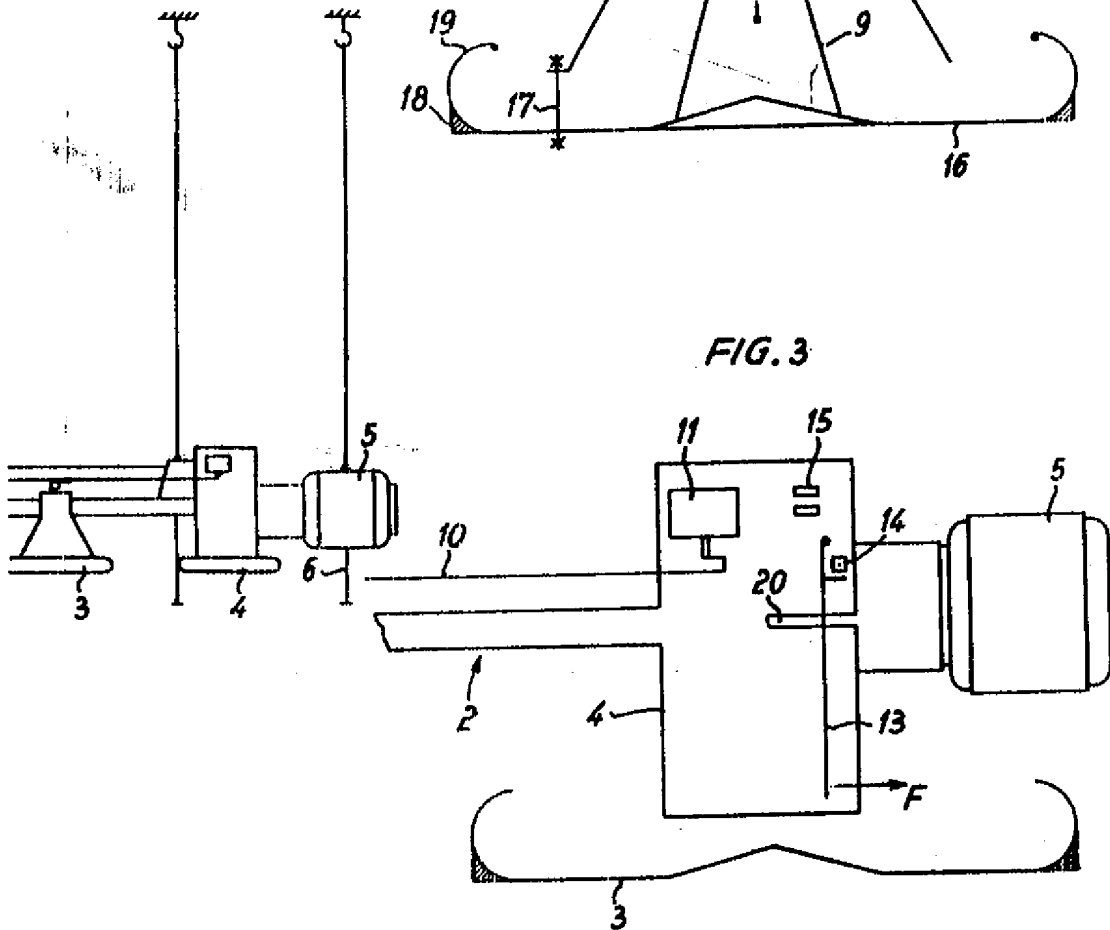
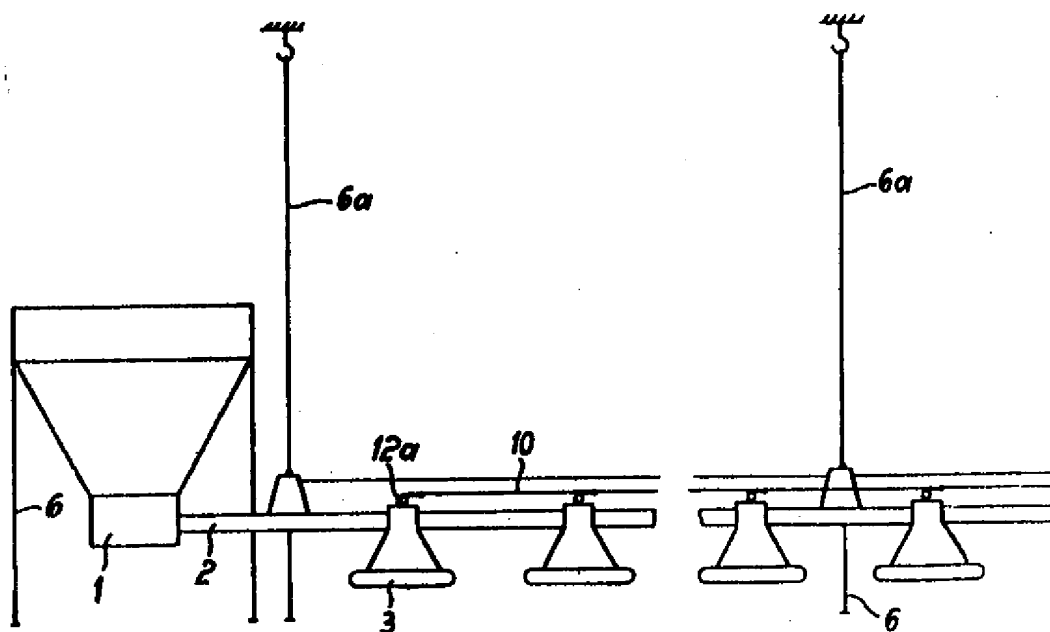


FIG. 1



PATENT SPECIFICATION

1,022,509

1,022,509



Date of Application and filing Complete

Specification: November 5, 1964.

No. 45112/64

Application made in Germany (No. E25834iii/45h) on November 8, 1963.

Complete Specification Published: March 16, 1966.

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Index at Acceptance:—B8 N6A1A; A1 M 11, 12).

Int. Cl.:—G 01 f // A01k.

GT. BRIT.
DIV.

COMPLETE SPECIFICATION

DRAWINGS ATTACHED

Device for the Automatic Charging of Feed Trays

We, ETABLISSEMENTS P. LECIEUX & CIE. S.A.R.L., a French Company, of Rue du Riez, Frankreich, Annroeuillin/Nord, France, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a device for the automatic charging of so-called feed trays in poultry-rearing establishments with a uniformly dosed quantity of feedstuff, utilizing a feedstuff supply device to which there is connected a plurality of feed trays.

In large poultry-rearing establishments the problem exists of a supply of feedstuffs to all birds in regularly measured quantities. Hitherto this problem was solved by collecting and storing in a reservoir the quantity of feedstuff due to each bird, multiplied by the number of birds, and then conveying this total quantity into the poultry house for example by way of feedstuff chains or feedstuff worms. The phenomenon occurred here that at the beginning of the feedstuff chain, that is to say at the entry, the birds collected and already commenced to eat there. The stronger birds here had a considerable advantage over the younger, who were repeatedly forced away, so that it was just the stronger and larger birds who received the largest quantity of feedstuff, while the weaker and younger birds always had to be content with the remainder which the larger birds had left over at the beginning of the feedstuff chain, that is to say the feedstuff which was conveyed by the feedstuff chain finally to the free end.

It is obvious that this does not ensure a uniform feeding of all individual birds. These problems are of particular importance when it is sought to bring forward the sexual maturity of the birds, in order thus

to achieve the earliest possible egg production, namely production of heavy and large eggs. Finally it is known that the feedstuff conversion rate of the birds, that is to say the quantity of feedstuff supplied in dependence upon the increase of weight or egg output thereby achieved, is most favourable up to certain age limits, it being possible nowadays to determine these age limits or crucial dates very precisely. Feeding beyond this time is uneconomical, and it is of great importance that within this calculated period of time there is fed to each bird exactly the specific quantity of feedstuff which it needs to achieve a maximum feedstuff conversion. It is obvious that such a precisely quantity-regulated charging is not possible in automatically working installations hitherto with the old methods. Hitherto a remedy was obtained by the fact that in such intensive rearing installations the feeding was effected by hand, that is to say the predetermined quantities of feedstuffs were poured into individual feed trays by hand, so that thus it was ensured that there was the same quantity of feedstuff in every feed tray, it further being known how many birds can eat from one feed tray, without hindering one another in doing so. It is obvious that such a manner of working is complicated and expensive and the invention is based upon the problem of providing a remedy here.

In order to solve this problem upon which the invention is based, it is proposed to provide a storage container in each case, arranged in the connecting device between feed tray and supply device, which container has a specific size and the outflow opening of which is automatically lifted or opened after the filling even of the last feed tray connected to the supply device. It can be seen that

[Price 4s. 6d.]

now all storage containers on the feed trays are filled by a mechanical feedstuff supply device, for example a worm, namely until even the storage container of the last feed container connected to the supply device is completely filled. As soon as this storage container is filled shutting off of the feedstuff chain and now lifting of the outflow opening of the storage container take place through an automatic control arrangement. Thus at the same moment all storage containers of all feed trays are opened, all storage containers containing the same quantity. The hens or poultry rapidly adjust themselves to this style of feeding, and now wait at every feed tray until the feedstuff flows out. Since the flowing out of the feedstuff takes place simultaneously at all feed trays, displacement of the weaker hens by the stronger hens can now no longer take place. Moreover due to the size of the storage container the quantity of feedstuff intended for each feed tray and thus for the number of hens eating at such a feed tray is measured out exactly, and can be calculated exactly.

The storage container within a feed tray can be made of any desired size, adapted to the requirements in each case. If the storage container does not possess the size which is necessary in order to supply the quantity of feedstuff corresponding to the number of hens of the tray on emptying once, then a double or treble filling of the storage container takes place in succession and distributed over the day, so that it is ensured that in one day or within twenty-four hours the hens are supplied with exactly the quantity of feedstuff reached by the calculation. If it should occur that an exact multiple refilling of the storage container is not necessary, because the quantity of feedstuff results in a need to supply less feedstuff, then one or the other storage container can be set out of action by the fact that automatic opening of the storage container is prevented. The charging of the storage container is then still readily possible, and the manner of working of the device can be constantly controlled in a satisfactory manner in this way.

Moreover it is proposed in accordance with the invention to provide a tube connection connected to the supply device and arranged within the conically formed supply nozzle known *per se* of a feed tray, which tube connection has at its lower end a jacket movable in its longitudinal axis, which in the lowered position extends down to the bottom of the feed tray and thus together with the pipe connection forms the storage container, and in the raised position effects clearance of the outflow opening.

At the end of the actual feedstuff supply device there is arranged so-called control

container which on filling halts the supply device, for example the worm, through a pressure contact, and effects raising of the jacket of the storage container. A time switch mechanism can be provided here which automatically effects restarting of the supply device when repeated charging of the storage containers is necessary.

In order that the feed trays which are connected to the supply device may be adapted to the size of the hens in each case, for example to chicks and to large hens in the course of a breeding period, it is proposed to provide an adjustable height of the edge of the feed tray, which can be achieved due to the fact that the outer edge of the feed tray is connected with the bottom of the feed tray through a screw connection, so that by rotation of the outer edge the latter can now be moved upwards or downwards.

Further advantages and features of the arrangement according to the invention will appear from the following description of an example of embodiment of the invention which is represented diagrammatically in the accompanying drawings, wherein:—

Figure 1 shows a diagrammatic elevation of a feeding installation according to the invention,

Figure 2 shows a section through a feed tray constructed in accordance with the invention on a larger scale, and

Figure 3 shows a section through the control device and the control container at the end of the supply device for the feed trays.

In the drawings, 1 designates a reservoir or silo, in which there is stored for example the daily quantity of feedstuff for the hens. From this reservoir the actual supply device 2 for the feedstuff leads into the poultry house. This supply device 2 can consist of a tube 2a in which there rotates a worm which is known *per se* and is not represented in the drawings for reasons of clarity. To this supply device 2 there is now connected a plurality of feed trays 3, it being possible for these feed trays 3 to be fixedly mounted on the supply device, that is to say on the tube 2a. At the end of the supply device there is a control assembly or container 4, in which the devices for the actuation of the actual installation according to the invention are housed, and in which furthermore there are arranged the contacts which effect actuation of the installation in dependence upon the filling quantity.

The worm housed in the supply device 2 is driven by an electric motor 5. The reservoir 1, the supply device 2 and the electric motor 5 can be arranged on supports 6 or suspended on suspension devices 6a on the ceiling of the actual poultry house.

The actual construction of the feed tray can be seen on a larger scale from Figure 2. According to the example of embodiment as represented, to the tube 2a, which has an appropriate opening in the region of a feed tray, there is connected a supply nozzle 7 which leads downwards. This supply nozzle 7 is surrounded externally by a conical jacket 8, which acts as protective device and is known in the feed trays usual hitherto. On the lower end of the supply nozzle 7 there is arranged a similarly slightly conically formed jacket 9, which is movable in the direction of the longitudinal axis of the supply nozzle 7 and of its own longitudinal axis, that is to say it can be drawn upwards or as shown in the drawing, let downwards on the supply nozzle 7, so that now the space formed by the supply nozzle 7 and the jacket 9 forms a storage container 7. 9, where as may be seen the feedstuff is not able to flow out. The actuation of this jacket 9 takes place through a connection, for example a wire cord 10, which leads to the control apparatus 4. Here the wire cord 10 is connected to a motor 11. The wire cord 10 leads from the motor 11 to all feed trays 3 and is attached to the individual jackets 9, with interposition of a short connection 12, which is represented in chain lines in Figure 2. The connection element 12, formed similarly for example as wire cord, runs over a reversing pulley 12a and is secured to the cord 10.

In the control container 4 there is arranged a pressure contact 13, which is movable in the direction of the arrow F in Figure 3. Through the switches 14 and 15 this pressure contact 13 actuates both the motor 5 and the drive device 11 for the device actuating the individual storage containers 7. 9.

Beneath the protective jacket 8 of each feed tray 3 there is arranged the actual feed tray 16, which is situated firmly on the protective device 8, for example with interposition of the screw connection 17 according to Figure 2. Due to this screw connection 17 it is further possible to draw the feed tray 16 so high that now the protective jacket 8 rests tightly on the bottom of the feed tray, so that despite the fact that the jacket 9 is drawn upwards no feedstuffs can flow out. As indicated at 18, the upper edge 19 of the feed tray is connected to the bottom 16 of the feed tray through a threading, so that it is possible to adjust the height of the upper edge 19, so that thus the ideal edge height can be adjusted for the size of the birds in each case.

The manner of operation of the device is as follows:

The worm situated in the tube 2a is actuated by the motor 5, switched on for ex-

ample with interposition of a time clock, namely with interposition of the connection device 20 according to Figure 3. Thus feedstuff is taken from the reservoir 1 and conducted into the individual storage containers, which are formed from the tube connections 7 and the jackets 9. In this condition the jacket 9 is in its lowermost position, that is to say it tightly closes the outflow opening of the pipe connection 7. If now every individual storage container 7. 9 is filled, the feedstuff is conveyed into the control container 4 arranged at the end and here effects a pressure in the direction of the arrow F upon the contact 13. Thus through the intermediary of the contacts 15 and 14 the drive motor 5 for the worm is halted and now the drive motor 11 is set in action for the operation of the cord 10. By a brief rotation of this motor—according to the example of embodiment selected—the individual jackets 9 are now raised, so that the feedstuff situated in the storage container 7. 9 can flow out. It can be seen that due to this measure all the feed trays 3 of the entire installation are filled simultaneously with equal quantities of feedstuff. By the switching on of an appropriate time switch clock it is possible to lower the jackets 9 again by an opposite rotation of the motor, that is to say to close the storage containers and to effect a new filling of the storage containers. This cycle can be repeated as often as necessary until the requisite total quantity of feedstuff is distributed. If in calculation of the total quantity of feedstuff it results that in the last remainder not all containers must be filled, then either the traction means 12 can be disconnected from the lead 10, or the feed trays which are not to be charged are drawn upwards by operation of the screw 17, so that now they rest against the lower edge of the protective jacket 8, so that thus flowing out of the feedstuff is prevented, despite the fact that the storage containers 7. 9 are opened. It can be seen that thus with this installation any adaptation to the requirements in each case can be carried out without difficulty.

Obviously the invention is not limited to the example of embodiment as represented, but modifications thereof are possible without departing from the scope of the invention as defined in the appended claims.

WHAT WE CLAIM IS:—

1. A device for the automatic charging of feed trays in poultry-rearing installations with uniformly regulated quantities of feedstuff, utilizing a mechanical feedstuff supply device to which a plurality of feed trays is connected, characterised by a storage container of specific size arranged in each case in the connection between feed tray and supply device, the outflow opening of which storage container is automatically opened

after the filling of the last storage container connected to the supply device.

2. An installation according to Claim 1, characterised by a tube connected to the supply device and arranged within a conically formed protective jacket, which tube has at its lower end a jacket movable over the tube in its longitudinal axis, which in the lowered position extends to the bottom of the feed tray and thus with the tube connection forms the storage container, and in the raised position effects clearance of the outflow opening.

3. An installation according to Claims 1 and 2, characterised by a control container arranged at the end of the supply device, which on filling halts the supply device and effects raising of the jackets, through a pressure contact.

4. An installation according to Claims 1

to 3, characterised by a time switch mechanism which automatically effects restarting of the supply device.

5. An installation according to claims 1 to 4, characterised by an adjustable height of the edge of the feed tray.

6. An installation according to Claim 5, characterised in that the outer edge of the feed tray is adjustable in its height from the bottom of the feed tray through a screw connection.

7. A device for the automatic charging of feed trays in poultry-rearing installations, substantially as herein before described with reference to, and as shown in, the accompanying drawings.

HUGHES & YOUNG,
Agents.

QUEM/ ★ T03 A3165 E/02 ★ FR 2483-652
 Axial position adjuster for poultry feed tube - comprises
 abutments which engage oblique slots separated by tongues in
 tube to allow settings to be altered using one hand

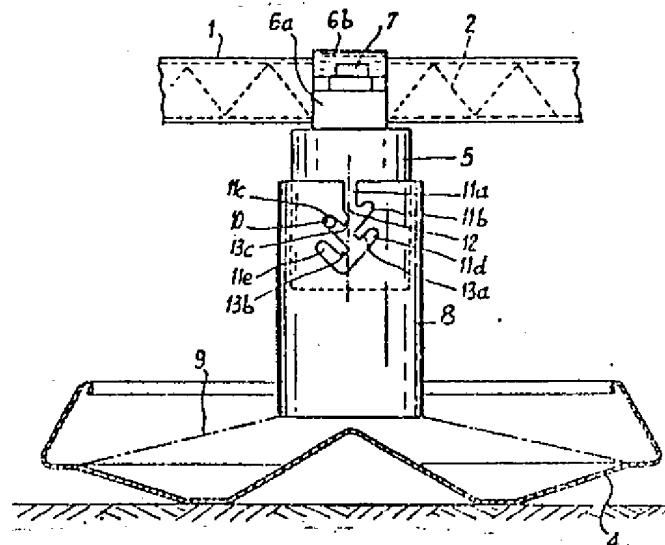
QUIEMPER M 29.05.80-FR-012237

P14 Q68 (04.12.81) A01k-39/* F16m-11/20 G05g-05/06
 29.05.80 as 012237 (1055DK)

The tube (1) contains a feed screw (2) which supplies grain which
 falls through a hole (3) and into a vertical tube (5) to which the
 feed tube is attached by a collar assembly (6) in which feet (7)
 engage. A sleeve (8) slides on the tube to form a conical volume (9)
 which extends to its base to permit a quantity of grain to be
 deposited on the plate.

The axial position of the sleeve is determined by an external
 abutment which engages a slot in the sleeve. The slot has a
 vertical section which opens into oblique sections separated by
 tongues. The adjustment of the appts. can be performed using
 one hand only. (6pp Dwg.No.1)

T6-C2



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PARIS

A1

**DEMANDE
DE BREVET D'INVENTION**

⑪

N° 80 12237

⑤④ Dispositif de réglage de la position axiale d'un manchon sur un support.

⑤① Classification internationale (int. Cl. 3). G 05 G 5/06; A 01 K 39/012 // F 16 M 11/20.

②② Date de dépôt 29 mai 1980.

③③ ③② ③① Priorité revendiquée :

④① Date de la mise à la disposition du
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Dispositif de réglage de la position axiale
d'un manchon sur un support.

Certains dispositifs comportent un manchon dont la position axiale sur un support est réglable. C'est le cas notamment des dispositifs d'alimentation des volailles comportant un tube vertical qui est en communication avec un conduit d'arrivée de la nourriture et sur lequel est monté mobile un manchon placé à une faible distance d'un plateau d'alimentation. La nourriture, par exemple des graines qui arrive par le conduit, s'écoule sur le plateau par le tube et le manchon. Le volume de nourriture qui peut demeurer sur le plateau dépend de l'écart entre le manchon et le fond du plateau; en déplaçant axialement le manchon, on peut ainsi régler ce volume.

Les moyens utilisés jusqu'à présent pour régler la position du manchon sont relativement compliqués et nécessitent l'utilisation des deux mains.

La présente invention a pour objet un dispositif de réglage de la position axiale d'un manchon, notamment d'axe vertical, sur un élément cylindrique tel qu'un support, qui est très simple et grâce auquel la position du manchon peut être réglée d'une seule main.

Le dispositif selon l'invention est caractérisé en ce que l'élément cylindrique comporte un ergot engagé dans une fente du manchon qui est formée de plusieurs parties reliées entre elles, disposées de part et d'autre d'un axe parallèle à la direction longitudinale du manchon, et obliques par rapport à l'axe, les parties situées d'un côté de cet axe étant décalées longitudinalement par rapport à celles situées de l'autre côté dudit axe.

L'ergot étant disposé dans l'une des parties de la fente, il suffit de faire pivoter le manchon pour que l'ergot se dégage de cette partie de fente et s'engage dans la partie de la fente située du côté opposé de l'axe et qui est décalée longitudinalement par rapport à la première, ce qui a pour effet de faire coulisser le manchon par rapport à l'élément cylindrique sur lequel il est monté. Cette manoeuvre peut facilement être exécutée d'une seule main.

Dans un mode de réalisation avantageux de l'invention, les languettes séparant les différentes parties de la fente s'étendent jusqu'à proximité immédiate de l'axe; leurs extrémités peuvent, par exemple, être écartées de cet axe d'une distance inférieure au

rayon de l'ergot. On évite ainsi que le manchon puisse se déplacer librement dans l'étendue de la plage de réglage, lorsque l'ergot se trouve dans l'axe de part et d'autre duquel se trouvent les parties de la fente.

5 L'élément cylindrique peut être constitué par un tube solide d'un demi-collier propre à être disposé autour d'un conduit d'alimentation muni d'une ouverture de passage au droit du tube et à être fixé à ce conduit par un autre demi-collier assemblable au premier. Il est ainsi facile de séparer du conduit le tube et son
10 manchon et de changer ces derniers s'ils ont été endommagés.

On a décrit ci-après, à titre d'exemple non limitatif, un mode de réalisation du dispositif selon l'invention appliqué au réglage d'un dispositif d'alimentation des volailles, avec référence au dessin annexé dans lequel :

15 La Figure 1 est une vue en élévation du dispositif;

La Figure 2 est une vue en élévation latérale de ce dispositif, avec coupe partielle.

Au dessin, on voit un tube 1 dans lequel est montée à rotation une vis transporteuse 2 et qui est muni, à sa partie inférieure, d'ouvertures 3 prévues à la verticale d'un plateau d'alimentation 4 pour volailles ou autres animaux, reposant sur le sol.
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Un tube 5 fait corps avec un demi-collier 6a qui entoure le tube 1 au droit d'une ouverture 3, et est fixé sur le tube 1 par un demi-collier 6b dans lequel des pattes 7 du demi-collier 6a peuvent s'encliqueter. Un manchon 8 est monté coulissant sur le
25 tube 5 et peut être immobilisé axialement par rapport à celui-ci de façon que son bord inférieur soit à une certaine distance du fond du plateau 4.

En fonctionnement, les graines destinées à l'alimentation des volailles sont déplacées dans le tube 1 par la vis 2. Quand
30 elles arrivent devant une ouverture 3, elles tombent dans le plateau 4 par le tube 5 et le manchon 8, en formant un volume tronconique 9 qui s'étend depuis la base du manchon 8. On voit ainsi que la quantité de graines contenues dans le plateau 4 dépend de la
35 position axiale du manchon 8 par rapport au tube 5.

Le tube 5 comporte un ergot extérieur 10 qui est engagé dans une fente du manchon 8. Cette fente comprend une partie verticale 11a qui débouche à la partie supérieure du manchon et à laquelle font suite des parties obliques 11b, 11c, 11d et 11e; les
40 parties 11b et 11d qui sont situées d'un même côté par rapport à

l'axe 12 de la partie verticale 11a, sont décalées en hauteur par rapport aux parties 11c et 11e qui sont situées de l'autre côté. Ces différentes parties ont sensiblement la même longueur de sorte que leurs fonds s'étagent dans la direction de l'axe 12. Les languettes 13a et 13b qui séparent respectivement la partie 11b de la fente de sa partie 11d, et la partie 11c de cette fente de sa partie 11e s'étendent jusqu'à la proximité immédiate de l'axe 12. Il en est de même de la languette 13c qui sépare la partie oblique 11c de la partie verticale 11a.

10 L'ergot 10 étant engagé dans l'une des parties obliques de la fente du manchon, par exemple dans la partie 11c, il suffit d'imprimer un mouvement angulaire au manchon pour que l'ergot se dégage de la partie 11c et s'engage de lui-même dans la partie 11b immédiatement supérieure à cette partie 11c. Le manchon se rappro-
15 che ainsi du plateau 4, ce qui diminue la quantité de nourriture qui s'établit automatiquement et régulièrement dans le plateau. Si, en même temps qu'on fait pivoter le manchon, on exerce sur lui une poussée vers le haut, l'ergot 10, après s'être dégagé de la partie 11c, s'engage dans la partie 11d immédiatement inférieure à cette
20 partie 11c. Le manchon s'écarte du plateau, ce qui augmente la quantité de nourriture déversée sur ce plateau. La manoeuvre du manchon 8 se fait facilement d'une seule main.

Le fait que les languettes 13a, 13b et 13c s'étendent à proximité de l'axe 12 empêche que l'ergot 10 passe directement
25 d'une des parties 11c, 11d ou 11e de la fente dans sa partie 11a, ce qui désolidariserait le manchon du tube, ou encore directement de la partie 11b à la partie 11e.

Il va de soi que la présente invention ne doit pas être considérée comme limitée au mode de réalisation décrit et représenté,
30 senté, mais en couvre, au contraire, toutes les variantes.

REVENDICATIONS

1. - Dispositif de réglage de la position axiale d'un manchon, notamment d'axe vertical, sur un élément cylindrique tel qu'un support, caractérisé en ce que l'élément cylindrique (5) comporte un ergot (10) engagé dans une fente du manchon (8) qui est formée de plusieurs parties (11a, 11b, 11c, 11d, 11e) reliées entre elles, disposées de part et d'autre d'un axe parallèle à la direction longitudinale du manchon, et obliques par rapport à l'axe, les parties situées d'un côté de cet axe étant décalées longitudinalement par rapport à celles situées de l'autre côté dudit axe.

2. - Dispositif selon la revendication 1, caractérisé en ce que les languettes (13a-13b-13c) séparant les différentes parties de la fente s'étendent jusqu'à proximité immédiate de l'axe.

3. - Dispositif selon la revendication 1 ou 2, caractérisé en ce que l'élément cylindrique (5) est constitué par un tube solidaire d'un demi-collier (6a) propre à être disposé autour d'un conduit d'alimentation (1) muni d'une ouverture de passage au droit du tube et à être fixé à ce conduit par un autre demi-collier (6b) assemblable au premier.

4. - Application du dispositif selon l'une des revendications 1 à 3 aux dispositifs d'alimentation des volailles ou autres animaux comportant un tube vertical (5) qui est en communication avec le conduit d'arrivée (1) de la nourriture et sur lequel est monté mobile un manchon (8) placé à une faible distance d'un plateau d'alimentation (4).

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(54) Feeder

(57) To regulate the amount of feed distributed from cylindrical distributor 4 of a feeder plate 1 is mounted on distributor 4 via a frame 2 and sleeve 3. Diametrically opposed teeth 8 inside sleeve 3 may be selectively engaged with protrusions 6 on the exterior of distributor 4 to alter the distance between the plate 1 and distributor 4.

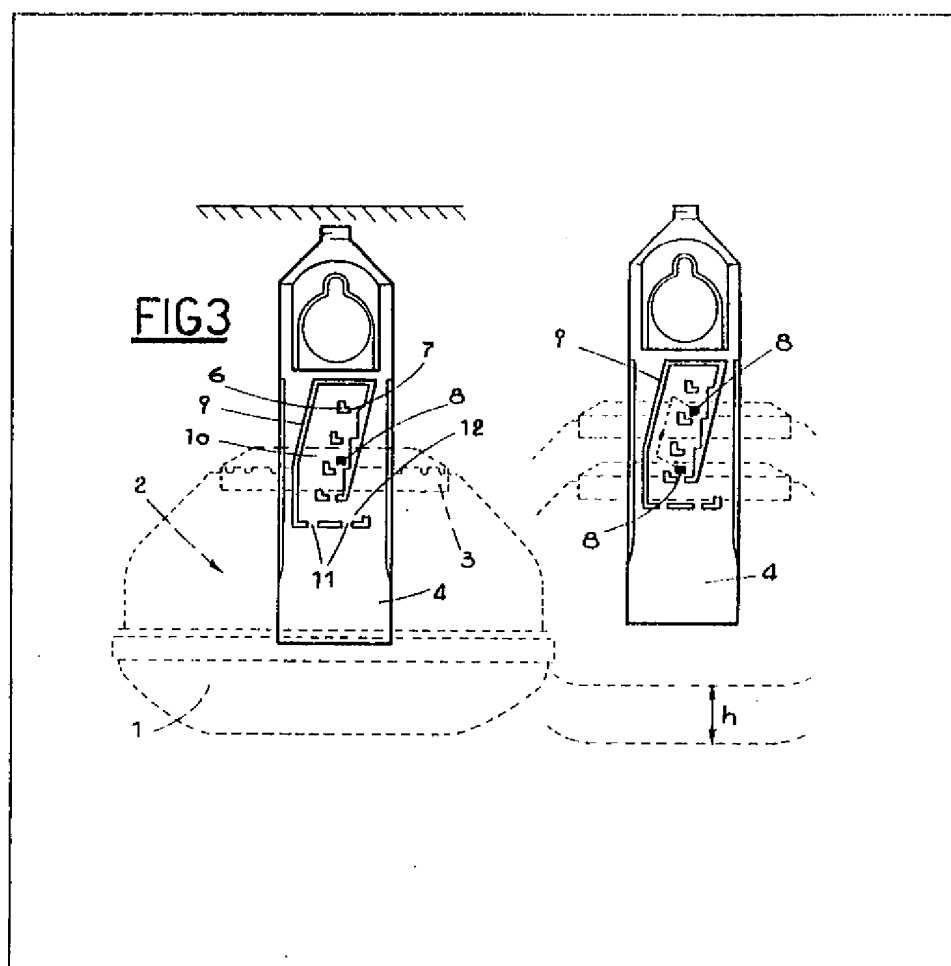
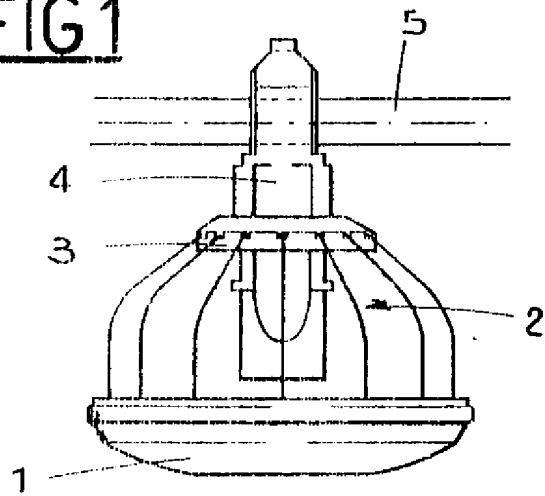
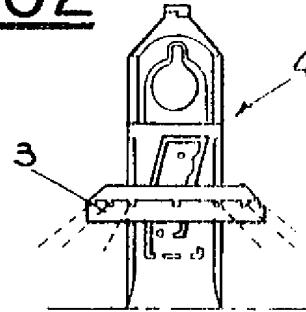
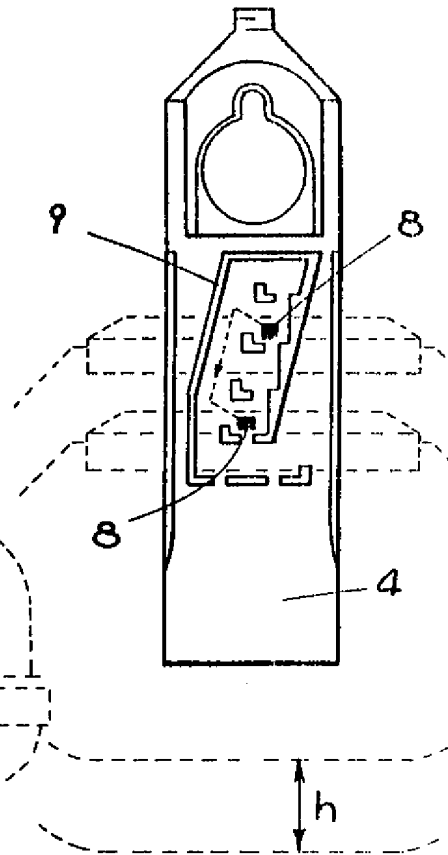
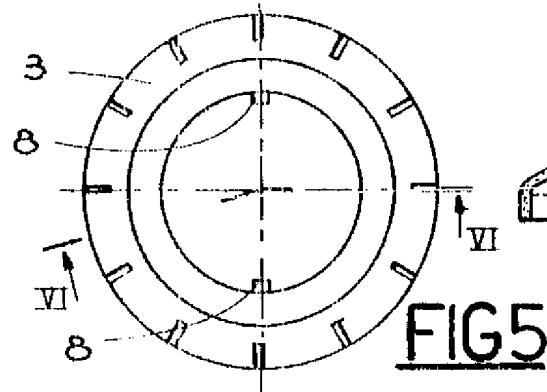
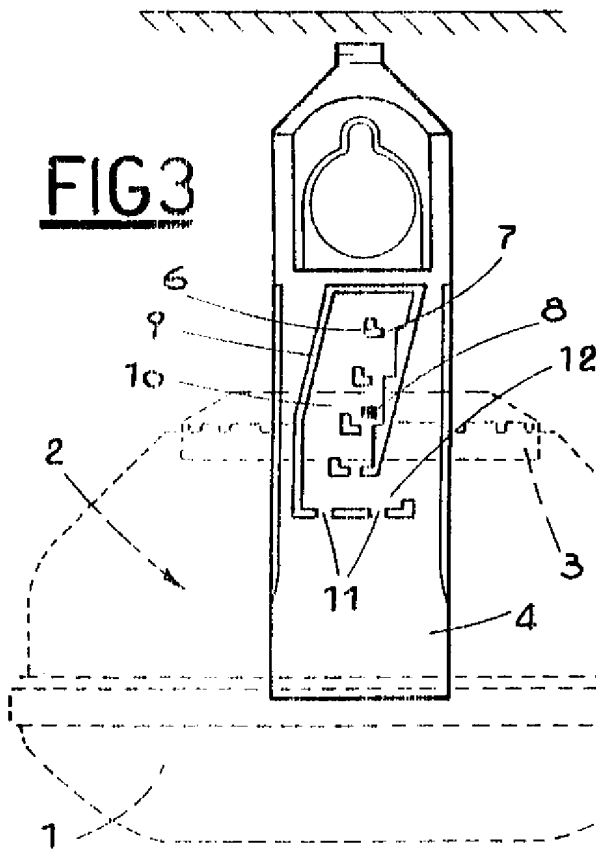
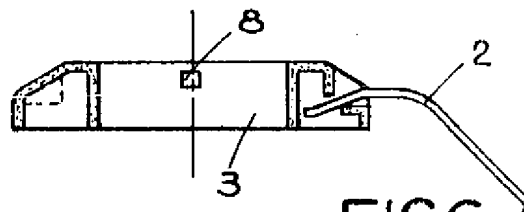


FIG1FIG2FIG4FIG3FIG5FIG6

SPECIFICATION

Manger allowing a level adjustment of the chicken feed, provided with a lower outlet

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At the present time, mangers allowing a level adjustment of the chicken feed, provided with a lower outlet consist of a suspended containing plate and of a cylindrical upright distributor inside which chicken feed coming from a horizontal tubular duct is flowing, said duct being connected to the above distributor and bearing the same. It is known that the chicken feed level in the containing plate (high level in case of chicks, low level in case of chickens) is determined by the relative distance between the cylindrical distributor and the containing plate below.

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In known mangers this relative distance can vary in turn, according to the different requirements, the containing plate being provided with metal bearing hooks introduced in holes arranged on the outer surface of the upright cylindrical distributor, at different heights. The main drawback of these known mangers is that the chicken feed level adjustment in the containing plate often requires a difficult work, as the holes on the distributor get frequently obstructed owing to the dirt and to the deposits of chicken feed, which involves a considerable loss of time by the operator.

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The main object of the invention is to provide a manger allowing to obtain a very easy and quick adjustment of the chicken feed level in the containing plate.

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This object is attained by a manger allowing a level adjustment of the chicken feed, provided with a lower outlet, according to the invention, of the kind comprising a suspended containing plate provided with a metal grate hung to an upright cylindrical distributor which is connected to a horizontal tubular duct suitable to transport chicken feed, characterized in that said cylindrical distributor, on its outer surface, is provided with a plurality of bearing notches disposed on different levels in diametral opposition, a ferrule integral to said metal grate to which said containing plate is fixed being also provided; said substantially cylindrical ferrule, provided with teeth capable of engaging mutually with said notches and arranged coaxially on said distributor, outwardly to it, can reach predetermined positions at a variable height, by carrying out shiftings along the longitudinal extent of said distributor.

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Advantageously and according to a further feature of the invention, said notches are substantially L-shaped and on their horizontal position they are provided with breaks suitable to allow the exhaust of deposits occasionally heaped up thereon. It is therefore possible to obtain a manger provided with a level adjustment of the chicken feed in the containing plate having a simple construction and allowing an easy and quick setting and disassembling, in view of the necessary maintenance works.

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Other objects and advantages of the present invention will become evident from the description which follows of a preferred embodiment thereof given by way of example only, with reference to the

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accompanying drawings, in which:

—Figure 1 is a side view of the manger as a whole;

—Figure 2 is a face view of the cylindrical distributor and of the ferrule;

70 —Figure 3 is a face view of the cylindrical distributor in which a mutual engagement position between one ferrule tooth and a notch is shown;

—Figure 4 is another view of the distributor seen in Figure 3, in which two possible positions of the ferrule and of the containing plate below are shown;

75 —Figure 5 is a plan view of the ferrule;

—Figure 6 is a sectional view of the ferrule along the line VI-VI of Figure 5.

Referring in particular to Figure 1 of the drawings, it has been indicated at 1 a suspended containing plate, which is provided, on its circular edge, with a metal grate 2 fixed, at its upper position, to a ferrule 3 made of plastic material. The ferrule 3 is coaxially mounted on an upright cylindrical distributor 4 (made of plastic material too) by which it is supported and which is connected, at its upper portion, to a tubular duct 5 transporting chicken feed. By this way, the containing plate 1 is hung to the cylindrical distributor 2 by means of the grate 2 and the ferrule 3.

Turning now to figures 2 and 3, two sets of L-shaped, bearing notches 6 are arranged on the distributor outer surface, in diametral opposition. The notches 6 of each set, which are arranged on different height levels, are aligned according to a nearly upright inclined straight line. On their horizontal portions these notches 6 are provided with breaks 7 suitable to allow the exhaust of deposits occasionally heaped up thereon.

Referring now to Figures 5 and 6 of the drawings, on its inner cylindrical surface, the ferrule 3 is provided with a pair of teeth 8, arranged in diametral opposition. The teeth 8 (see also Figures 3 and 4) engage with the notches 6 (each tooth 8 in connection with each set of notches 6), thus setting the height h of the containing plate integral to the ferrule 3 (and consequently the chicken feed height in the plate 1) to the wished position.

Formed on the cylindrical surface of the distributor 4 in proximity to the notches 6 and located around these ones, are substantially longitudinal ribs 9 suitable to form a passage-guide allowing teeth 8 to slide during the positioning of the ferrule 3 to a predetermined level.

These ribs 9 are also provided with horizontal breaks 11 allowing the exhaust of the heaped up deposits and with a vertical break 12 allowing the teeth 8 to disengage in case the disassembling of the ferrule 3 from the distributor 4 is required.

As shown in Figure 4, in order to carry out the change of the ferrule 3 from one position to another, it is necessary but a light rotation of the ferrule 3 around the distributor 4 in one direction or in the opposite one for the new engagement.

As various embodiments might be made of the above invention and as various changes might be made in the embodiment above set forth, it will be understood by those skilled in the art that the invention is not limited by the preferred embodiment hereabove shown and described.

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CLAIMS

1. A manger allowing a level adjustment of the chicken feed, provided with a lower outlet, of the kind comprising a suspended containing plate (1)
5 provided with a metal grate (2) hung to an upright cylindrical distributor (4) which is connected to a horizontal tubular duct (5) suitable to transport chicken feed, characterized in that said cylindrical distributor (4), on its outer surface, is provided with a
10 plurality of bearing notches (6) disposed on different levels in diametral opposition, a ferrule (3) integral to said metal grate (2) to which said containing plate (1) is fixed being also provided; said substantially cylindrical ferrule (3) provided with teeth (8) capable of
15 engaging mutually with said notches (6) and arranged coaxially on said distributor (4), outwardly to it, can reach predetermined positions at a variable height, by carrying out shiftings along the longitudinal extent of said distributor (4).
- 20 2. A manger as claimed in claim 1, in which said plurality of bearing notches (6) consists of two sets of corresponding notches (6), in diametral opposition on the outer surface of said cylindrical distributor (4), the notches (6) of each set being aligned
25 according to a nearly upright inclined straight line, said teeth (8) of the ferrule (3) being arranged in diametral opposition, each one corresponding to each set of notches (6).
3. A manger as claimed in claims 1 and 2, in
30 which ribs (9) are provided on the outer surface of said cylindrical distributor (4), in proximity to the notches (6), said substantially longitudinal ribs being inclined according to said inclined straight line and being suitable to form a passage-guide (10) allowing
35 teeth (8) to slide during the positioning of the ferrule (3) to a predetermined level.
4. A manger as claimed in claim 1 or in anyone of claims 2 and 3, in which said notches (6) are substantially L-shaped and are provided on their horizontal
40 portion, with breaks (7) suitable to allow the exhaust of deposits occasionally heaped up thereon.
5. A manger as claimed in claim 1, in which said cylindrical distributor (4) and said ferrule (3) are made of moulded plastic material.
- 45 6. A manger allowing a level adjustment of the chicken feed, provided with a lower outlet, substantially as hereinbefore described with reference to the accompanying drawings.